STERYLIS®

PROFESSIONAL ROOM STERILISERS

USER'S
MANUAL

MODELS :
ULTRA-220, ULTRA-330,
ULTRA-440, ULTRA-550.

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Notes for service technicians

The following service instructions are intended **exclusively for qualified service personnel.** To reduce the risk of danger (electric shock, UV-C exposure, exposure to high ozone concentrations), persons without appropriate qualifications or without appropriate training should not perform any servicing other than as described below.

When servicing this appliance, the service technician is exposed to dangerous UV-C radiation, high concentration of the hazardous substance – ozone, and high voltage. The possible effects of exposure to these dangers and assistance in such cases are described later in the manual. **It is essential that you read this information before you start servicing.** Before starting service work, you should also read the safety data sheet (ozone) and the UV-C radiation safety data sheet.

All service work must be carried out in accordance with the instructions for service technicians.

The voltage inside the device is high and can cause an electric shock. This is especially true for the very high voltage generated by the ozone generators. It is dangerous to touch any parts inside the device. In the event of an injury, follow the first aid instructions on page 5 of this manual.

The device emits UV-C radiation hazardous to human health. Before servicing, make sure that the fluorescent lamps do not emit UV-C radiation. Observe the general safety rules. Use protective measures in accordance with this manual or the UV-C safety data sheet. In case of exposure to radiation, follow the first aid instructions in this manual and the UV-C safety data sheet.

The device generates ozone, which is a dangerous substance, can lead to respiratory damage and at very high concentrations is dangerous for human and animal life. When carrying out maintenance work, do not put your face close to the ozone generator or inhale the ozone directly from the generator. Observe the general safety rules. Use protective measures in accordance with this manual or the ozone data sheet. In case of poisoning, follow the first aid instructions in this manual or the ozone safety data sheet.

Notes for users

1) The STERYLIS room steriliser can emit health hazardous UV-C radiation and generate high ozone concentrations. For this reason, please read these operating instructions very carefully, especially the chapter on safety!
2) Keep this manual and store it in a safe place. Do the same for the safety data sheet (ozone) and the UV-C radiation safety data sheet.
3) Special attention should be paid to the information specified in the grey fields with the warning sign and those in bold.
4) Follow the instructions.
5) In case of detection of malfunctioning of the device, contact the manufacturer's service department or directly the manufacturer.
6) For additional information not included in this manual, please contact the manufacturer directly.
7) It is essential that you read the meaning of the following warning icons. They are located in the manual, on the housing of the device or on other parts of the steriliser and are directly related to it:

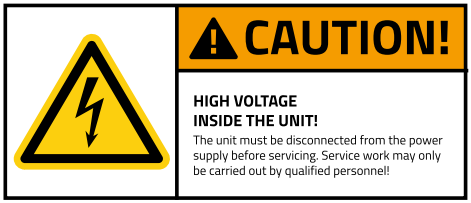
Symbol	Meaning	Symbol	Meaning
	Important safety instruction. Be sure to read it!		The device generates ozone, which is classified as a dangerous substance.
	Warning, high voltage!		The device generates ozone, which can lead to airway damage.
	Dangerous UV-C radiation inside the device.		The device generates ozone, which in very high concentrations can lead to death or serious damage to health.
	No entry to the sterilised room!		

Proper disposal of this product

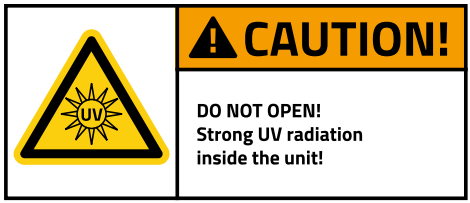
This label indicates that this product should not be disposed of with other household waste throughout the EU. To avoid harmful effects on the environment and human health from uncontrolled waste disposal, the equipment should be recycled for material reuse. To return your used device, use the equipment collection systems or contact the point of sale where you purchased the product. They can accept this product for safe environmental recycling.

Important safety instructions

There are several warning stickers on the housing of the device, the contents of which are also presented below. **It is imperative that you comply with them!** Failure to comply with the information contained therein may lead to a risk to the health or life of the user or other persons, animals and living organisms, and may lead to the failure of the device.



High voltage inside the device is dangerous to human health. In case of electric shock with the parameters as in the device, skin burns, muscle spasms, loss of consciousness and, in extreme cases, cardiac arrest can occur. Therefore, **all service work may only start after the unit has been disconnected from the power supply and may only be carried out by qualified and properly trained personnel!**
In the event of an electric shock, isolate the victim from the power source as soon as possible - turn off the fuses and then unplug the plug from the electrical outlet. The second, but more risky way is to pull the victim away from the power source with a wooden stick. Call an ambulance as soon as possible after the victim is isolated from the power supply. If the victim is unconscious but breathing, circulation is maintained and spinal injury can be ruled out, the spine should be placed in a lateral fixed position. If the victim is not breathing, artificial respiration must be performed and, if necessary, a heart massage. If the victim has symptoms of concussion (pale, cold skin, sweat, chills, accelerated heart rate), place them in an anti-shock position - on their back, with their legs raised.



Despite a specially designed disinfection channel and limiting switch protection (removing any of the air filters disconnects the fluorescent lamps), there is always a minimal risk of UV-C radiation escaping outside the device due to improper use of the product or the occurrence of an unforeseeable failure by the manufacturer. **It is therefore necessary to read the following information on the possible effects of UV-C exposure, first aid measures and protective equipment!**
Fluorescent lamps inside the device emit UV-C radiation, which can cause negative effects on skin and eyes. The effects of radiation exposure depend on the wavelength, the amount of radiation absorbed and the type of tissue exposed. The most common symptom of skin exposure to this type of radiation is erythema (redness). The degree of redness and its course depend on the size of the radiation and the wavelength of the radiation. A high dose of UV-C radiation can lead to skin burns, which are manifested by painful swellings and blisters. Long-term exposure to radiation leads to unfavourable changes in the epidermis: it accelerates the skin aging process and causes pre-cancer and neoplastic changes. Repeated exposure of the skin to radiation, particularly high intensity, can cause excessive keratinization, which is a contributor to the formation of cancers such as basal and squamous cell carcinoma and melanoma. UV-C radiation absorbed by the skin can cause inflammation of the cornea, conjunctivitis, damage to the retina and cornea and can lead to photochemical cataracts. The most common, acute symptom of eye exposure to UV-C radiation is inflammation of the cornea and conjunctiva. Corneal inflammation manifests itself in photophobia, increased tearing, a feeling of a foreign body in the eye, eyelid spasm, and sometimes visual impairment. The symptoms of inflammation appear after a period of concealment lasting even less than 30 minutes, and the symptoms of inflammation disappear about 14 hours after exposure. Radiation-induced conjunctivitis occurs after a latency period of 5 to 10 hours and is manifested by redness, itching, burning and tearing. If a higher dose is used, the correct vision may be impaired. The symptoms disappear after 10 hours to several

days, depending on the exposure. **For this reason, never open the device while the UV lamps are running!**

Description of first aid measures:

General rules	All symptoms of exposure to UV-C radiation occur after the so-called latency period lasting from several minutes to several hours.
Eyes	In case of slight symptoms of eye burn (slight pain, tearing, itching, redness): avoid direct sunlight, cool your eyes (with a cloth dampened with cold water or glasses with cooling gel). Do not scratch or rub your eyes. If you have contact lenses, it is essential to remove them to prevent further irritation. An appointment with an ophthalmologist is recommended. In case of more serious symptoms (severe blinking pain, foreign body impression in the eye) it is necessary to contact an ophthalmologist. Until an ophthalmologist has given assistance, proceed as with lighter symptoms of eye burns.
Skin	In case of slight burns, it is recommended to cool the skin with running water or apply a cooling gel on the skin. Contact with a doctor is recommended. In case of increased skin exposure to UV-C radiation, it is essential to consult a doctor.

	Personal protective equipment (UV-C radiation)
Skin protection	Laboratory apron or other laboratory skin protective clothing
Hand protection	Nitrile gloves
Eye protection	Spectacles with side panels and UV400 marking, protective goggles or full face shields. Filters in the given protective measures must be marked at least „3-1,2" (3rd part number, 1,2 degree of protection). If glasses or goggles are used as eye protection, cover the remaining skin of the face with clothing.

⚠ CAUTION!

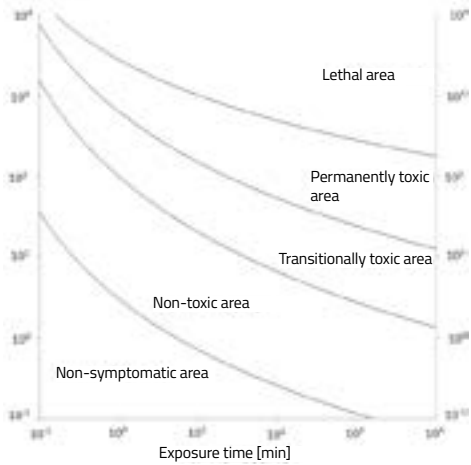
DURING OPERATION IN STERILIZATION MODE O_3 (OZONIZATION) THE PRESENCE OF PEOPLE IN THE ROOM IS PROHIBITED!
High concentration of ozone is generated - risk of airway damage.

The device is designed to sterilise rooms by generating ozone in a concentration that may pose a threat to the health and life of humans and other living organisms. Despite the safety principles during the operation of the product as described in the following chapters, **it is essential to read the information below on possible effects of ozone and on first aid in case of exposure to a hazardous concentration of the substance.**

Ozone, due to its strong oxidizing effect, has an irritating effect on conjunctivitis and respiratory mucosa. This may result in burning pains and redness of conjunctivitis, coughing, wheezing, difficulty in breathing, increased frequency and severity of asthma attacks in people suffering from this disease, and increased ailments in people with coexisting respiratory and cardiovascular diseases. In very high concentrations it is dangerous to live.

The effect of ozone on living organisms depending on concentration is shown in the table below (based on [6]):

Effect	**Concentration**
Permissible workplace ozone concentration at 8 h exposure	0,05-0,1 ppm
Odour perceptibility – average	0,02 ppm
Odour perceptibility – depending on body properties	0,01-0,04 ppm
Minimum concentration causing irritation to eyes, nose, throat, headache, shortness of breath	from 0,1 ppm
Respiratory disorders, reduced oxygen absorption, respiratory disorders, general fatigue and chest pain, dry cough	0,5-1,00 ppm
Headache, breathing difficulties, drowsiness, severe pneumonia at prolonged exposure, skin irritation or dryness	1-10 ppm
Danger to life and health	10 ppm
Fatal concentration for small animals in 2 hours	15-20 ppm
Fatal concentration in a few minutes	above 1700 ppm



The graph on the left shows very clearly what effects ozone poisoning can have on humans depending on their concentration and exposure time. The graph shows: asymptomatic area (at such concentrations and such exposure times there should be no symptoms of ozone poisoning), non-toxic area (possible light, life-threatening symptoms), transiently toxic area (strong symptoms of poisoning that will disappear after a certain time, alone or after the victim's help), permanently toxic area (very strong symptoms lasting for the victim) and lethal area (huge concentrations of ozone may contribute to the death of the exposed person).

It is essential that you read the first aid measures set out in the table below:

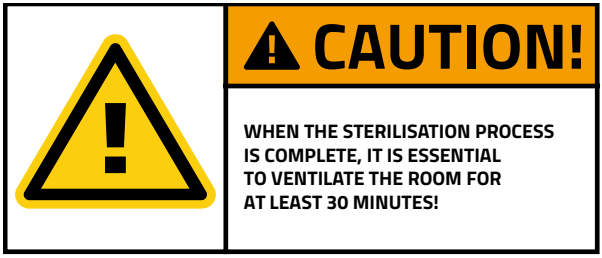
General rules	To avoid exposure to the negative effects of ozone poisoning, wear full face and eye masks, protective gloves and protective clothing in accordance with the table "Personal protective equipment".
Guidelines for first aid providers	Wear protective gloves, avoid contact with eyes. Wash your hands thoroughly with water and soap after providing medical assistance
Inhalation	If the airways come into contact with too high a concentration of ozone, leave the ozone room as soon as possible and go out into the fresh air or take the injured person out into the fresh air. In the case of respiratory difficulties, give the victim oxygen. If the injured person stops breathing, CPR must be performed
Contact with eyes	Eyes exposed to too high a concentration of ozone should be rinsed with water as soon as possible for about 15 minutes. If you have contact lenses, remove them and rinse your eyes with water. Rinse with a continuous but not very strong stream of water, keep eyelids wide open, move the eyeball while rinsing
Contact with skin	Skin exposed to too high a concentration of ozone should be rinsed with running water and washed with soap.
Swallowing	Is not possible

Always seek professional medical attention in cases of serious or persistent symptoms!

Information on special treatment:
- If necessary, provide the victim with oxygen.
- The victim's circulation should be monitored.
- Show the doctor maintaining the safety data sheet (ozone)

	Personal protective equipment (ozone)
Hygiene measures	Water and soap
Respiratory protection	Full protective respiratory and eye mask with NO P3 filter (according to EN 14387)
Eye protection	Full protective mask for the airways and eyes
Hand protection	Chemical-resistant protective gloves
Skin protection	Protective clothing and footwear

Ozone sensor located on the inside the steriliser allows the current concentration of ozone in the room to be tested, so that the controller can determine the required ozone time and control the individual ozone generators accordingly to maintain the correct ozone concentration during sterilisation. The ozone sensor also transmits information to the controller when the ozone concentration in the room becomes safe for the user. These are the reasons why the ozone sensor, **which is an integral part of the device, has to work properly and therefore must not be blocked by any foreign objects and must be in full contact with the air in the ozoned room** so that their indications are correct! Improper measurements of the ozone sensor can lead to life-threatening and health-threatening effects as described in this chapter. The ozone sensor is calibrated by the manufacturer.



Although the sterilisation of the room will not be completed before the ozone concentration of 0.1 ppm (completely safe for humans) has been reached, **the room must be absolutely ventilated for at least 30 minutes after sterilisation.** This is to bring the ozone level of the room to 100% safe. Please note that the ozone sensors installed in the steriliser may fail or the user may undesirably set them off, thus interfering with their measurements. It should also be borne in mind that the safe level of ozone is different for adults, different for children and different for animals. Ventilating the device will also allow to get rid of any fog created during the ozone process (a natural phenomenon) and to get rid of the smell of ozone in the room partially or completely.

The safe operation of the product is also related to the principles listed below:

- The device may only be operated in sterilisation mode in a tightly closed room (no ozone may penetrate outside the sterilised room). Therefore, make sure that all windows, doors and any other escape routes for ozone from the room are tightly closed. Gaps around and under doors and ventilation grilles must be carefully sealed. The room must be protected from access by third parties.
- It is also forbidden to stay in rooms adjacent to the ozone room during the ozoning process. If the ozoned room is not properly sealed, some ozone may penetrate into other rooms.
- To protect the room from access by third parties, it is essential to place warning signs "WARNING! NO ENTRY! STERILISATION IN PROGRESS". Place them in a clearly visible place. The signs are included in the package.
- After starting the sterilisation mode, leave the room where the steriliser is operating as soon as possible. The time to leave the room is 60 seconds from the start of the ozoning function, only after that time the ozone generators start. It is forbidden to stay in the room during operation of the ozone generator without a full respiratory and eye mask with a suitable absorber. It is recommended to use a protective mask according to PN-EN 136 with an absorber according to PN-EN 14387, type NO P3. It is also recommended to use personal protective equipment for the skin according to the table of personal protective equipment.
- Smoking and the use of tools that cause a flame or spark is prohibited in an ozoned room.
- In order to deactivate the sterilisation mode before the end of the process, one should enter the room wearing a full respiratory and eye mask with a suitable absorber (in accordance with EN 136 and EN 14387 standards) and in the skin protection equipment in accordance with the personal protective equipment table.
- When the ozoning of the room is complete, it must be thoroughly ventilated for at least 30 minutes.
- Ozone is a heavier gas than air, after switching off the circulating fan of the steriliser, STERYLIS tends to settle in the recesses of the ground and migrate by the floor.
- It is not recommended to sterilise rooms below ground level without mechanical ventilation.
- It is forbidden to carry out the process of ozonisation by persons with olfactory disorders.

Moreover, the device should not be operated in places directly exposed to sunlight, with high humidity, in places where chemicals are used and in rooms with very small cubic capacity. For the correct operation of the ozone sensors the device must be used in an environment with the following parameters:

Temperature: -20 to 50˚C
Pressure: 900 to 1100 hPa

Do not clean the room intended for ozone sterilisation with chlorine-based cleaning agents or other chlorinated substances. This can cause erroneous indications of the ozone sensor in the device and expose the user to danger.

The device is equipped with a pre-filter and an active carbon filter. In addition, there is one additional pre-filter in the package, which must be used interchangeably with the activated carbon filter when starting the sterilisation mode.

The manufacturer does not guarantee that the ozone sterilisation process (carried out in an appropriate manner) will not harm electronics, flowers and other sensitive or poor quality materials. Ozone as such is a powerful oxidant and in addition to destroying microorganisms it can also destroy other objects. No animals or plants should be left in the disinfected room, as living organisms can suffer, so it is recommended to take them out. If there are valuable objects in the room, including electronics, it is also advisable to move them during disinfection. The use of ozone sterilisation (ozoning) from time to time should not affect the destruction of objects in the room, however, the abuse of this process can all too often cause such destruction. Therefore, the manufacturer does not guarantee that long ozone sterilisation will not damage the items.

The manufacturer shall not be liable for any damage to property or damage to health and life resulting from improper use of the STERYLIS ULTRA devices or from the general safety rules of use.

Product features

Purpose

The product is designed for air cleaning and disinfection and surface disinfection. Depending on the mode of operation, it can work as a standard air purifier, an air purifier extended by sterilisation lamps with UV-C light source and as an ozoniser. The maximum cubic capacity of the room in which the product can work is given in the technical characteristics of the product for each model.

Product description

STERYLIS ULTRA room steriliser is a device consisting of air filters, UV-C lamps, ozone generators, fan(s), controller together with a user panel containing segmented and graphic displays and a backlit panel. The whole device is closed in a housing made of stainless steel, powder coated on the outside. The device is also equipped with a flashing warning lamp (beacon), a lamp indicating safe concentration of ozone in the room and a piezoelectric buzzer. The device can operate in several different operating modes.
In filter mode, the room air is cleaned with a pre-filter (F1) and an activated carbon filter (F2). A pre-filter with electrostatic properties traps particles of harmful pollutants, including those of microscopic size (several micrometers). It also removes harmful bacteria and allergens using a coating applied to the filter medium. In addition to particles, the active carbon filter retains harmful gases and odours through adsorption.
In the UV-C disinfection mode the UV-C lamps between the two filters are activated. The lamps emit UV-C radiation with a wavelength of 253.7 nm and power depending on the size of the device (see technical data). UV-C radiation irreversibly inactivates viruses, bacteria, fungi, moulds and yeasts. The Sterylis steriliser has been designed in such a way that people can stay inside when the device is in disinfection mode with the UV-C light source switched on. The UV-C radiation that breaks down the DNA is enclosed in a specially designed light trap so that not even the smallest part of it can escape outside the device.
In the silent disinfection mode, the unit operates in a similar way to the standard mode, but with reduced fan capacity. This results in a significantly reduced sound power level of the steriliser.
In sterilisation mode fan(s), filters and ozone generators are operating. This mode is used to sterilise the air and surfaces that come into contact with the air by generating ozone evenly throughout the room. The capacity of the ozone generator varies depending on the version (see technical data). This mode requires special precautions to be taken by the user and proper preparation of the room for the ozone process (see: Chapter „Important safety instructions" and „Procedure for carrying out the ozoning process").
ULTRA STERILIS is available in 4 versions, whose technical parameters are shown in the table:

Name	**STERYLIS**	**STERYLIS**	**STERYLIS**
Model	**ULTRA-220**	**ULTRA-330**	**ULTRA-440**
Rated voltage	230 V	230 V	230 V
Frequency	50 Hz	50 Hz	50 Hz
Rated power*	470 W	670 W	810 W
Rated current*	2.0 A	2.9 A	3.5 A.
Maximum airflow capacity	290 m^3/h	410 m^3/h	900 m^3/h
Types of air filters	F-1: IGL 095-902 F-2: IGL 095-903	F-1: IGL 095-904 F-2: IGL 095-905	F-1: IGL 095-902 F-2: IGL 095-903
Number of UV-C sources / Model	4 / IGL 012-217	6 / IGL 012-217	8 / IGL 012-217
UV-C wavelength	253,7 nm	253.7 nm	253.7 nm
UV-C source standard	EN 61195	EN 61195	EN 61195
UV-C source electrical power	220 W	330 W	440 W
UV-C source radiated power	78 W	118 W	157 W
Maximum UV-C radiation dose	367 J/m^2	409 J/m^2	415 J/m^2
Ozone generator capacity	20,000 mg/h	30,000 mg/h	30,000 mg/h
Net weight	26 kg	36 kg	48 kg

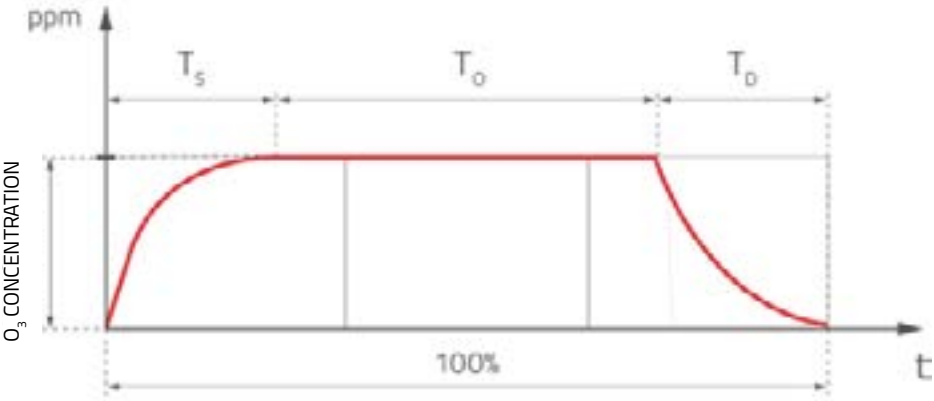
*in sterilisation mode

Name	STERYLIS
Model	ULTRA-550
Rated voltage	230 V
Frequency	50 Hz
Rated power*	1010 W
Rated current*	4.4 A
Maximum airflow capacity	1180 m^3/h
Types of air filters	F-1: IGL 095-902 F-2: IGL 095-903
Number of UV-C sources / Model	10 / IGL 012-217
UV-C wavelength	253.7 nm
UV-C source standard	EN 61195
UV-C source electrical power	550 W
UV-C source radiated power	196 W
Maximum UV-C radiation dose	499 J/m^2
Ozone generator capacity	40,000 mg/h
Net weight	55 kg

*in sterilisation mode

Operating principle

Ozoning: The steriliser has ozone generators, the number of which varies depending on the version. The ozoning process consists in starting all the ozone generators in the device and achieving a concentration of O_3 particles in the room of 7 ppm. Once the required concentration is reached, the generators are disconnected until the concentration drops to 6 ppm. At this point, the ozone generators are restarted and aim to reach a concentration of 7 ppm again. Then they are disconnected again and the process repeats itself. This is the so-called modulated efficiency of the ozone generators by pulsation. Changes in the concentration of ozone in the room are shown in the diagram below. In the manual ozone sterilisation mode the user can change the settings for the working ozone concentration and ozone duration.
Time T_S is the time required to achieve the sterilising ozone concentration (default 5 ppm), T_O is the time required for the sterilisation process, controlled by the controller, depending on the achieved ozone concentration, T_D is the time required for the process to return to a safe ozone concentration (0.1 ppm), controlled by the controller, assisted by an ozone destructor.



For very high ozone concentrations, the ozone concentration may be lower and be at least 2 ppm. However, this is sufficient to allow for an effective ozoning process with an extended duration.

Ozone is a powerful oxidant, so it is perfect for killing bacteria, viruses, moulds and removing unpleasant odours. It is highly reactive, which means that it reacts with other molecules, breaking down their structures. The effectiveness of ozone in eliminating odours lies in the fact that, as a gas, it is able to reach wherever there is air, i.e. all the cracks, nooks and gaps inside a room. It breaks down particles present in the air responsible for odour in rooms and kills bacteria, viruses or moulds. Ozoning is an effective method of disinfection, deodorisation or disinsectisation, thanks to which rooms are not only free of unpleasant aromas but also safe and sterile. Ozone is used to sterilise living quarters, public areas, health care facilities (including operating theatres), processing plants (e.g. butcher's shops), warehouses, fruit and vegetable storage facilities, catering facilities for refrigeration chambers and shop sales halls. Ozoning is also used to extend the shelf life of food products, e.g. by eliminating fungi, bacteria and moulds, which allows to significantly extend the storage period of vegetables, fruit or dried tobacco or fruit in storage facilities. It is also a well-known and effective way of getting rid of unpleasant smell from changing rooms, classrooms or gymnasiums in schools. Ozoning is a very effective method of odour removal and deodorization of clothes and shoes, often used in costume and costume rentals or wardrobes in theatres. Ozone is also used to sterilise and remove odours from children's toys, especially in public playrooms for children.

UV-C disinfection: The UV-C lamps used in the device emit radiation of a strictly defined wavelength of 253.7 nm. It is a wavelength that has a photolithic effect on microorganisms such as bacteria, moulds, yeasts and viruses. Ultraviolet light of this wavelength effectively penetrates their cell membrane destroying the structure of their DNA and thus preventing their reproduction. Subjected to high levels of UV-C radiation, microorganisms and viruses are permanently destroyed. In addition to the disinfecting effect of the UV-C radiation used, we also obtain a high quality deodorising effect (removing odours from the air). Due to the special design of the UV-C chamber, the device operating in disinfection mode can be used in rooms where people are present. Specially designed light traps inside the device completely prevent invisible, harmful UV radiation from escaping from the device. The specially selected type and high power of the UV-C light source with a selective emitted wavelength of 253.7 nm, and the unique solution of the double quartz filter UV-C lamp used in STERYLIS sterilisers, causes the harmonic components of the ozone-producing UV light emissions below 240 nm to be blocked inside the lamp. Thus, in disinfection mode, the STERYLIS steriliser does not produce any harmful ozone at all and is completely safe for the people around it. In addition, the corresponding wavelengths produced by UV-C light sources contribute to the acceleration of the decomposition of O3 particles into bi-atomic oxygen, reducing the ozone process length. This is the so-called ozone destruction function that every STERYLIS ULTRA model is equipped with.

Packing contents

A user who has purchased any model of STERYLIS room steriliser receives a set of:

1) Complete room steriliser ready for use
2) Additional pre-filter
3) Detachable 3-meter long power cord
4) Additional 10-meter long power cord*
5) Operating manual
6) Safety data sheet (ozone)
7) UV-C safety data sheet
8) Safety data sheet
9) Declarations of conformity in Polish and English
10) Two warning signs „WARNING! NO ENTRY! STERILISATION IN PROGRESS" (as below):

* if you purchase the device as an option with a longer power cord

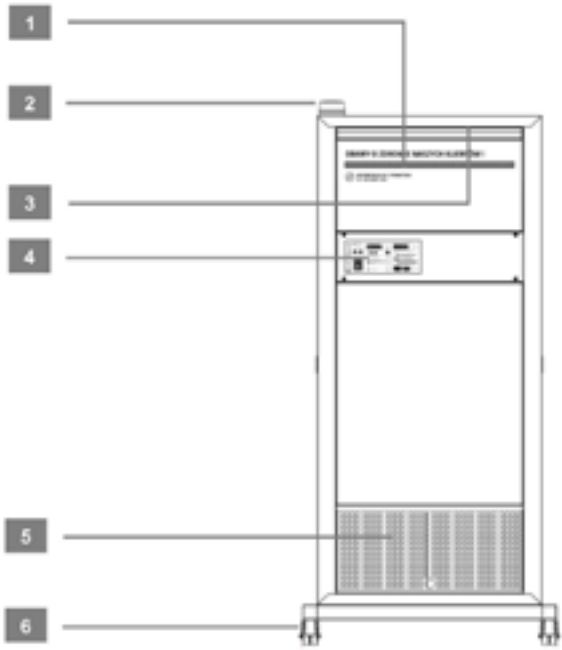
If the manufacturer is not responsible for any of the above mentioned parts of the documentation, he should be contacted for completion or downloaded from the website at the address: https://www.sterylis.igloo.pl/#dopobrania

Operation

The device should be operated in rooms whose parameters are consistent with the technical characteristics of the device. In addition, they must be operated in accordance with the information contained in the chapters on safety and maintenance.

Operation of the device

To operate the room steriliser, use the user panel on the front of the device. The user panel consists of a main switch, controls: individual modes of operation, failure and warning, function keys, three segment displays and a graphical display of the ozone diagram. The device is also equipped with a flashing warning lamp (beacon), a piezoelectric buzzer signalling the operation of the ozone generators and an illuminated panel active in the disinfection mode.



1	Backlighted panel	4	User panel
2	Beacon light	5	Cassette filters (pre-filters)
3	Cassette filters (with activated carbon)	6	Transport wheels

User panel

1	The signal lamp signals a user safe ozone concentration in the air after the ozone cycle.
2	Sterilisation mode section O3: segment display indicating the operating mode and error codes, „+", „-", „PROG. SET" and „START" buttons and warning lights „O3" and „!"
3	O_3 concentration section: segmented display indicating the ozone concentration and „+", „-" and „SET" buttons
4	Alarm icons for failure of a system of ozone generators, ozone sensor or UV-C fluorescent lamps
5	Main device switch
6	LEDs indicating individual operating modes of the device and „START" buttons activating individual operating modes
7	Graphical display of the sterilisation cycle diagram
8	Ozone time section: segmented display for process time, „+", „-" and „SET" buttons

Starting the device and selecting the operating mode

The device can operate in four operating modes, the activation of which is forced by means of appropriate buttons on the user panel. The following modes are available: Filtration, UV-C air disinfection – standard mode, UV-C air disinfection – silent mode and O_3 sterilisation

To start the device, insert the power cord plug into an electrical outlet. The voltage required for proper operation is 230 V, 50 Hz. Then set the main switch of the device to „ON".

"Filtration" mode

To start the „Filtration" mode of operation, press and hold the START button located at the green filtering mode indicator. The filter mode light will start blinking at a high frequency (the device will check the proper functioning of the relevant actuators) and then it will start to light steadily and the device will start working in the selected mode. If any errors are detected, the unit will go into standby mode and display the corresponding error codes on the display in the „STERILISTION" section.

The filtration mode can also be directly selected if the unit is in disinfection mode. To switch from disinfection mode to filtration mode, press and hold the START button located at the green filtration mode light.

To interrupt the filtration process, press and hold the START button located at the green filtration mode light again.

"UV-C air disinfection - standard mode" operating mode

To start the „UV-C air disinfection - standard mode" operating mode, press and hold the START button located at the green standard mode light. The standard mode light will start blinking at a high frequency (the device will check the proper functioning of the relevant actuators) and then it will start to light steadily and the device will start working in the selected mode of operation. Confirmation of the disinfection mode is the operation of the front panel illuminated on the unit. If any errors are detected, the unit will go into standby mode and display the corresponding error codes on the display in the „STERILISTION" section.

The standard mode can also be directly selected if the unit is in silent disinfection or filtration mode. To switch from silent disinfection or filtration mode to standard disinfection mode, press and hold the START button located at the green standard mode light.

To interrupt the standard disinfection process, press and hold the START button next to the green standard mode light again.

"UV-C air disinfection – silent mode" operating mode

To start the „UV-C air disinfection - silent mode" operating mode, press and hold the START button located at the green silent mode light. The silent mode light will start blinking at a high frequency (the device will check the proper functioning of the relevant actuators) and then it will start to light steadily and the device will start working in the selected mode of operation. Confirmation of the disinfection mode is the operation of the front panel illuminated on the unit. If any errors are detected, the unit will go into standby mode and display the corresponding error codes on the display in the „STERILISTION" section.

The silent mode can also be directly selected if the unit is in standard disinfection or filtration mode. To switch from standard disinfection or filtration mode to silent disinfection mode, press and hold the START button located at the green silent mode light.

To interrupt the silent disinfection process, press and hold the START button next to the green silent mode light again.

"O_3 sterilisation" mode

NOTE!

Ozone is a substance hazardous to human and animal health and life. Before starting to operate the device in sterilisation mode, it is essential to read these operating instructions, especially the safety sections!

NOTE!

Before starting the sterilisation mode, replace the activated carbon filter with a standard filter. Such a filter is included with the device. When the sterilisation mode is finished, the filter must be replaced with an activated carbon filter. For instructions on how to replace the filters, see the section „CHANGING THE FILTERS".

CAUTION!

In order to carry out the ozonisation process correctly and safely, it is necessary to follow the instructions in chapter 8 - Procedure for carrying out the ozonisation process!

NOTE!

In order for the sterilisation process to start, the ozone sensor has to undergo preheating on its own! Trying to start the sterilisation before this process is completed is impossible! In this case, wait the required time. The heating up of the ozone sensor is indicated by the slow blinking of the safe ozone concentration indicator.

The sterilisation mode can be performed in two ways – sterilisation in automatic mode, where the process is carried out according to the parameters with factory settings, and in manual mode, where the user can change the parameters of ozone time (from 2 to 4 hours) and working ozone concentration (from 5 to 7 ppm).

"O_3 sterilisation – automatic" mode

To start the „O3 sterilisation" mode in automatic mode press and hold the yellow START button in the „O3 sterilisation" section of the user panel. Enter the correct access code.

Entering the access code:
The 4-digit code entered is shown on the display under „O3 sterilisation". The „+" and „-" buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The „PROG.SET" button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow button „START" longer. If the code is incorrectly entered, the code „XXXX" or „HHHH" will be displayed and a short beep will occur. In this case, the code must be re-entered.

Once the correct code has been approved the display in the „O3 sterilisation" section will show the selected type of sterilisation, the display in the „Ozone time" section will start counting down the time remaining until the start of sterilisation and the „O3" and „!" warnings will start blinking.

After the 60-second countdown, the unit will check the proper functioning of the relevant actuators and then the ozone generators will start and the unit will operate in the selected mode of operation. If any errors are detected, the unit will go into standby mode and display the corresponding error codes on the display in the „STERILISATION" section.

When the device is in sterilisation mode, an additional acoustic signal is activated (can be deactivated according to the instructions in 6.4) and a flashing signal generated by the warning beacon. When the safe ozone concentration (0.1 ppm) is exceeded, the safe ozone concentration indicator will stop illuminating. The sterilisation process or the countdown to the start of sterilisation can be interrupted at any time by pressing any button on the user panel. The device will then go into standby mode.

During the TS phase, the display in the „Ozoning time" section will indicate the set ozoning time, during To phase the set ozoning time will be counted down and during the TD phase the time „00:00" will be displayed. This informs the user about the phase of the sterilisation process.

After completion of the sterilisation process, the device will switch off the ozone generators and switch on the UV-C fluorescent tubes to accelerate the ozone decomposition. When the safe concentration (0.1 ppm) is reached, the ozone safety light will light up.

"O_3 sterilisation – manual" mode

To start the „O3 sterilisation" mode in automatic mode press and hold the PROG.SET button in the „O3 sterilisation" section of the user panel. Enter the correct access code to enter manual mode.
Entering the access code:

The 4-digit code entered is shown on the display under „O3 sterilisation". The „+" and „-" buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The „PROG.SET" button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow button „START" longer. If the code is incorrectly entered, the code „XXXX" or „HHHH" will be displayed and a short beep will occur. In this case, the code must be re-entered.

After approving a correctly entered code, the sterilisation process parameters must be completed. The display in the „O3 sterilisation" section will show one of the following programs: "SEt.1", "SEt.2" or "SEt.3". These are three different options for setting the parameters of the selected mode available to the user.

To select one of the above mentioned settings, press the „+" button or the „-" button in the "O3 sterilisation" section to scroll up or down the setting selection accordingly.

The settings of the currently selected program will be displayed in the „O3 Concentration" and „Ozone time" sections. To change the settings of the preset ozone concentration, control the „+" and „-" buttons in the „O3 concentration" section to increase or decrease the value of the active digit by 1 respectively. The active digit is changed using the „SET" button. To change the setting of the preset ozone time, control the „+" and „-" buttons in the „ozone time" section to increase or decrease the value of the active digit by 1 respectively. The active digit is changed using the „SET" button.

To save the settings for a given program, press and hold the „PROG.SET" button in the „O3 sterilisation" section. Save of the settings will be confirmed by a short beep and a single blinking of the concentration and time displays.

To save the settings of all programs and to proceed directly to the sterilisation process, press and hold the yellow „START" button in the „O3 sterilisation" section. The display in the „O3 sterilisation" section will show the selected type of sterilisation, the display in the „Ozone time" section will start counting down the time remaining until the start of sterilisation and the „O3" and „!" warnings will start blinking.

After the 60-second countdown, the unit will check the proper functioning of the relevant actuators and then the ozone generators will start and the unit will operate in the selected mode of operation. If any errors are detected, the unit will go into standby mode and display the corresponding error codes on the display in the „STERILISATION" section.

When the device is in sterilisation mode, an additional acoustic signal is activated (can be deactivated according to the instructions in 6.4) and a flashing signal generated by the warning beacon. When the safe ozone concentration (0.1 ppm) is exceeded, the safe ozone concentration indicator will stop illuminating.

The sterilisation process or the countdown to the start of sterilisation can be interrupted at any time by pressing any button on the user panel. The parameter settings for the relevant programs can be interrupted by pressing the „START" button for any of the other operating modes. The device will then go into standby mode.

During the TS phase, the display in the „Ozoning time" section will indicate the set ozoning time, during To phase the set ozoning time will be counted down and during the TD phase the time „00:00" will be displayed. This informs the user about the phase of the sterilisation process.

After completion of the sterilisation process, the device will switch off the ozone generators and switch on the UV-C fluorescent tubes to accelerate the ozone decomposition. When the safe concentration (0.1 ppm) is reached, the ozone safety light will light up.

Other functions in sterilisation mode

Deactivation/activation of the buzzer in sterilisation mode:
To deactivate or activate the buzzer in sterilisation mode follow the instructions in section 6.4, changing parameter C130 to 0 (deactivation) or 1 (activation) respectively.
Ozone destruction:
Each version of the steriliser is equipped with an ozone destruction function. The ozone destructor operates by activating UV-C lamps at the end of the ozoning process. Activation of the lamps emitting the appropriate wavelength of UV-C radiation causes an accelerated decomposition of O3 particles into bi-atomic oxygen. The UV lamps start up spontaneously and operate until the ozone concentration in the room reaches 0.1 ppm.

If, within 120 minutes from the start of operation of the device in sterilisation mode, the ozone concentration at the set limit level is not reached, the steriliser considers the ozone phase to be complete, displays an error and moves on to the waiting phase. Then, after 30 minutes, the ozone destruction process will begin by starting the UV lamps.

If the room exceeds the 10 ppm ozone concentration threshold, the unit will display an error and proceed to ozone destruction until the safe concentration is reached and the safe ozone concentration light is lit.

Sterilisation cycle chart:
On the user panel, in the „sterilisation cycle chart" section, a process diagram is created during the operation of the device in sterilisation mode. This graph is the dependence of the ozone concentration in the room on time. It determines the time Ts, To and TD, where TS is the time required to achieve the sterilising ozone concentration, TO is the time required for the sterilisation process depending on the achieved ozone concentration, TD is the time required for the process to return to a safe ozone concentration (0.1 ppm), supervised by the controller, assisted by an ozone destructor.

Compliance with the ozone concentration limits

Ozone is a highly oxidizing, irritating gas, which already at low concentrations has harmful effects on the eyes, nose, airways and lungs. For this reason, it is necessary to use real-time measurement of its concentration by the controller in order to establish and observe the limit values. The legal limit for workplace ozone concentration is 0.1 mg/m^3 (according to PN-Z-04007-2:1994, the WEL is 0.15 mg/m^3). The built-in measurement system with the ozone sensor allows for real-time, user-safe values. The electrochemical sensor of the measuring system is distinguished by its high accuracy even at low ozone concentrations, which allows for early detection of the gas limit.

Changing the configuration parameters

To change the configuration parameters, press and hold the „SET" button in the „Ozone time" section of the „Ozone time" in the standby mode. Then enter the appropriate code to change the parameters.

Entering the access code:
The 4-digit code entered is shown on the display under „O3 sterilisation". The „+" and „-" buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The „PROG.SET" button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow button „START" longer. If the code is incorrectly entered, the code „XXXX" or „HHHH" will be displayed and a short beep will occur. In this case, the code must be re-entered.

Parameter code	Description	Min value	Max value	Default value
C101	Operating concentration in AUTO mode [ppm]	1	10	6
C102	Ozone time in AUTO mode [min]	1	360	180
C130	Siren operation in sterilisation mode [ON/OFF]	0	1	1

The individual parameters are changed using the „+" and „-" buttons in the "O3 sterilisation" section. The code of the selected parameter is displayed in the „O3 sterilisation" section. The current value of the selected parameter is displayed in the „O3 concentration" section. To change the value of the parameter, operate the „+" and „-" buttons in the „O3 Concentration" section. The active digit is selected using the „SET" button in the same section of the user panel. To confirm the value of the selected configuration parameter, press and hold the „PROG.SET" button. The selected value will be confirmed by a short beep and all displays will flash.

To return to the standby mode, press and hold the „SET" button in the „Ozone time" section.

Working time counters

The device is equipped with the operating time counters listed in the table below. The user has the possibility to read the indications of these counters and reset them.

To view or reset the counters, press and hold the „SET" button in the „Ozone time" section while the unit is in standby mode. Then enter the appropriate code to change the parameters.

Entering the access code:
The 4-digit code entered is shown on the display under „O3 sterilisation". The „+" and „-" buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The „PROG.SET" button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow button „START" longer. If the code is incorrectly entered, the code „XXXX" or „HHHH" will be displayed and a short beep will occur. In this case, the code must be re-entered.

You can interfere with the following counters:

Parameter code	Description
d102	UV-C lamp service interval timer [s]
d105	Fan service interval timer [s]
d108	Service interval timer for the 1. ozone generator bank [s]
d111	Service interval timer for the 2. ozone generator bank [s]
d114	Ozone sensor service interval timer [s]
d117	Ozone sensor life timer [s]

The individual parameters are changed using the „+" and „-" buttons in the "O_3 sterilisation" section. The code of the selected parameter is displayed in the „O_3 sterilisation" section. The current value of the selected parameter is displayed in the „O_3 concentration" section. To reset the selected counter, press and hold the „PROG.SET" button. The reset will be confirmed by a short beep and all displays will flash.

Other functionality of the device

Other remaining functionality of the device is described in subsections 6.6.1, 6.6.2 and 6.6.3. These are: AUTO-TEST function and OZONE-SENSOR-TEST function

To access the above mentioned functions, press and hold the „SET" button in the „Ozone time" section of the device standby mode. Then enter the appropriate code to move to the above mentioned functions.

Entering the access code:

The 4-digit code entered is shown on the display under „O3 sterilisation". The „+" and „-" buttons change the value by 1 active digit. An active number is the one that flashes at a high frequency, inactive numbers light up constantly. The „PROG.SET" button changes the active digit to the next one on the right. After entering the correct code, confirm it by pressing the yellow button „START" longer. If the code is incorrectly entered, the code „XXXX" or „HHHH" will be displayed and a short beep will occur. In this case, the code must be re-entered.

The available functions are under the following codes:

Parameter code	Description
t200	AUTO-TEST function
t201	OZONE-SENSOR-TEST function

The individual parameters are changed using the „+" and „-" buttons in the „O_3 sterilisation" section. The code of the selected parameter is displayed in the „O_3 sterilisation" section. To move to a given function, select it and press and hold the „PROG.SET" button. The selection of a given function will be confirmed by a short beep and all displays will blink.

AUTO-TEST function

The function consists in an automatic check of the operating status of all actuators (fan, UV-C lamps, ozone generators) and the ozone sensor. If the device detects an error in one of the elements during the process, it will display the error. If an error is detected during previous use of the unit, the AUTO-TEST function can erase this error if the unit operates correctly during this function (error erasing does not apply to the ozone sensor).

During the AUTO-TEST function, the message „tESt" is displayed and the operating mode, warning and safe ozone concentration lights blink quickly.

To interrupt the AUTO-TEST function, press any of the „START" buttons corresponding to filtration, disinfection or sterilisation modes.

When the AUTO-TEST function is completed, the unit will go into standby mode.

OZONE-SENSOR-TEST function

The function consists of an automatic check of the ozone sensor's operating status. If the device detects an error in the ozone sensor during the process, it will display the error. If an ozone sensor error has been detected during previous use of the unit, the OZONE-SENSOR-TEST function can erase this error if the unit will function correctly during this function.

During the AUTO-TEST function: the message „O3_t" on the display in the „O3 sterilisation" section, the measured instantaneous voltage value on the display in the „O3 concentration" section, the time remaining for checking the ozone sensor on the display in the „Ozone time" section and the warning lights and the safe ozone concentration are blinking quickly.

To interrupt the AUTO-TEST function, press any of the „START" buttons corresponding to filtration, disinfection or sterilisation modes.

When the AUTO-TEST function is completed, the unit will go into standby mode.

Maintenance

Recommendations for maintenance

CAUTION!

All maintenance work should only be carried out when the unit is disconnected from the power supply (with the exception of alarm removal activities)!

CAUTION!

All service activities (except filter replacement) may only be carried out by authorized personnel and the manufacturer's factory service. For details on service, see the Warranty and Service section.

- The device should be kept in a state of general cleanliness. Use only neutral detergents for cleaning.
- Do not use for washing the water jet under pressure.
- The air filters must be checked and replaced periodically as described in Chapter 7.2. The indication of overuse / air filters need to be checked it is indicated on the user panel by displaying the corresponding messages (see Chapter 9). The replacement of the filters must be carried out in accordance with the instructions in Chapter 7.2.1 and 7.2.2. Do not lead to clogging of the filters or for them being used excessively long.
- After the service life of the UV lamps (9,000 operating hours) in the steriliser, they should be replaced. This is related not only to the possible burning of the lamp but also to the decrease of its maximum radiation dose over time. The UV lamps' overrunning time is indicated on the user panel by displaying an appropriate message (see Section 9). Only the qualified service technicians can replace the lamp/s!
- After the service life of the ozone generators (9,000 operating hours) in the steriliser, they should be replaced. The ozone generators' overrunning time is indicated on the user panel by displaying an appropriate message (see Section 9). Only the qualified service technicians can replace the ozone generators!
- After the expiry date of the ozone sensor (12 months) or after 4,500 hours of operation, it must be replaced by qualified service!

Replacing the filters

Regular filter replacement is necessary for proper operation. This applies to both pre-filters and activated carbon filters. The condition of the filters should be checked every 500 operating hours. The filters must be replaced every year (unless the filters show no signs of use). The need to check/replace the filters is indicated by appropriate messages. In addition, it is necessary to replace the activated carbon filter with a standard filter when the device is in sterilisation mode.

Pre-filter replacement (F1)

Make sure that the device is switched off and disconnected from the power supply.

Remove the wind girder, lift the filter gently up, bend it slightly, pull it down. Install the new filter in the same way, but in reverse order.

A pre-filter that is pulled out of the destination causes a violation of the limiting switch. If a limiting switch is violated during the sterilisation process, the process will be stopped and completed and the device will go into standby mode. In case of violation of the limiting switch in filtration or disinfection mode, the process will be stopped at the current moment and the unit will go into pause mode. When the limiting switches of the filter cartridge are no longer violated (inserting the filter cartridge back), the unit will resume the filtration/disinfection process. Violation of the limiting switch also results in a corresponding error on the display in the "O3 sterilisation" section. If the end point violation stops, the error is automatically reset.

The safety limiting switches provide protection in case of an attempt to change the air filters during operation.

Active carbon filter replacement (F2)

Make sure that the device is switched off and disconnected from the power supply.

Pull out the cartridge from the top of the device, remove the filter, insert a new filter, insert the cartridge into the target location.

The active carbon filter that is pulled out of the destination causes a violation of the limiting switch. If a limiting switch is violated during the sterilisation process, the process will be stopped and completed and the device will go into standby mode. In case of violation of the limiting switch in filtration or disinfection mode, the process will be stopped at the current moment and the unit will go into pause mode. When the limiting switches of the filter cartridge are no longer violated (inserting the filter cartridge back), the unit will resume the filtration/disinfection process. Violation of the limiting switch also results in a corresponding error on the display in the "O3 sterilisation" section. If the end point violation stops, the error is automatically reset.

The safety limiting switches provide protection in case of an attempt to change the air filters during operation.

Replacing the UV-C lamps

Regular replacement of the UV-C radiators is essential for proper operation. Exceeding the service life of UV light bulbs may result in their burning out. It should also be remembered that with time the maximum dose of lamp radiation decreases.

The lifetime of UV bulbs is approx. 9000 hours. This is at the same time the time after which a message indicating that this time has been exceeded will be displayed.

CAUTION!

The replacement of UV-C fluorescent tubes in STERYLIS sterilisers may only be carried out by the manufacturer's service or another authorised service centre!

Replacing the ozone generators

Regular replacement of the UV-C lamps is essential for proper operation. The lifetime of the generators is approx. 9000 hours.

CAUTION!

The replacement of ozone generators in STERYLIS sterilisers may only be carried out by the manufacturer's service or another authorised service centre.

Replacing the ozone sensor

The ozone sensor is one of the most important elements of the device, which determines its proper functioning and safety. Regular replacement of the ozone sensors is essential for proper operation. The expiry date of the ozone sensor is 12 months – after that time it must be replaced regardless of the operating time of the device. The ozone sensor also has a service life of 4,500 hours. If the sensor's operating time is exceeded before 12 months – it must be replaced after 4,500 operating hours.

CAUTION!

The replacement of the ozone sensor in STERYLIS sterilisers may only be carried out by the manufacturer's service or another authorised service centre.

Maintenance

The room ozonisation process must be carried out according to the following instructions. Before starting to ozone, read the rest of this manual and meet all the safety requirements described at the beginning of this document.

1) Prepare the room according to the instructions below:

(a) Clean the room - vacuum, ventilate, clean from any spills.
(b) Move the furniture away from the walls, open the cabinets and empty them.
(c) Remove all plants and animals (except fish in the aquarium) from the room.
(d) Take out or seal with foil valuable objects such as works of art, electronics.
(e) Tightly close all escape routes of ozone from the room - (windows, doors). Gaps around and under doors and ventilation grilles must be sealed carefully.
(f) Make sure that no one is in the rooms adjacent to the sterilised room

2) Prepare the device for sterilisation mode - replace the activated carbon filter with a standard filter in accordance with the filter replacement instructions.
3) Place the unit on a stable surface and as close to the centre of the room as possible. You can put it above the floor. In such a case secure it from falling.
4) Place the warning sign „WARNING! NO ENTRY! OZONING IN PROGRESS". If the room has other possible entrances, also place this sign on them in a visible place.
5) Connect the unit to the mains (voltage of 230 V, frequency of 50 Hz).
6) Switch the main switch on the control panel to the „ON" position.
7) Make sure that the device does not indicate any alarms (malfunction or need to replace components)
8) Start the „O3 sterilisation" mode according to the instructions in section 6.3.4.
9) Exit the room by closing the door behind you and make sure again that it is tightly sealed and that no one is in the room immediately adjacent to the ozone room.
10) The ozoning process has begun. Its duration is determined by the controller based on the current ozone concentration in the sterilised room. During the ozoning it is forbidden to enter the room. In extremely exceptional cases, where it is necessary to enter such a room, it is necessary to wear a full respiratory and eye mask with an appropriate absorber (in accordance with EN 136 and EN 14387 standards).
11) During the ozonisation process, the device generates a light signal (using a warning beacon) and an acoustic signal (using a buzzer) - if not already deactivated.
12) The ozoning process will be completed when the green safety ozone LED comes on. It is possible not to reach the threshold concentration of ozone in a room (2 ppm) if its volume is too high. In this case, after 120 minutes from the start of the ozoning process, the device will display an error, go to the waiting phase and then after 30 minutes go to ozone neutralisation with UV lamps.
13) Once the ozone process is complete and you have made sure that the green safety ozone lamp is active, you can enter the room to ventilate it. The room must be ventilated for a minimum of 30 minutes by providing a supply of fresh air from outside. It is forbidden to stay in the room during ventilation.
14) Once the ventilation is complete, the room can be considered as completely safe.

Notes:

Fog may form during the ozoning. This is a normal phenomenon caused by the reaction of ozone with volatile organic compounds. The odour of ozone persisting after the ozoning process does not indicate its presence.

Error and message codes

All possible errors and messages are indicated by 4-digit codes on the display in section „O_3 sterilisation". If more than 1 error occurs simultaneously, the codes are displayed one after the other, the presentation time of each code is 2 seconds. The meaning of all errors and messages is described in the table below.

Code	Description
P001	Ozone process error - time Ts exceeded
P002	Ozone process error - time Td exceeded
P003	Ozone process error - ozone concentration limit exceeded
P004	Ozone process error - threshold ozone concentration not reached
E101	UV-C sources malfunction
E102	Fan malfunction
E103	Ozone generator malfunction
E201	Air filter error F1
E202	Air filter error F2
E500	Ozone sensor error - reference
F001	Exceeded service life of the UV-C lamp
F002	Exceeded service life of air filters
F003	Exceeded service life of ozone generators
F004	Exceeded service life of the ozone sensor
F005	Exceeded expiry time of the ozone sensor

Declaration of conformity

CE

This device complies with the relevant directives and standards in force in the European Union, provided that the device is operated as intended and in accordance with this manual.

The product complies with the following directives:

- Directive 2014/35/EU, on the harmonisation of the laws of Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
-
- Directive 2014/30/EU, on the harmonisation of the laws of the Member States relating to electromagnetic compatibility
-
- Directive 2011/65/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment

And with the following standards:

- PN-EN 55014-1:2017
- PN-EN 55014-2:2015
- PN-EN 60335-2-65:2004+A1:2008+A11:2012
- PN-EN 60335-1:2012+A11:2014-10+A13:2017-11+A1:2019-10+A2:2019-11
- PN-EN 61000-3-2:2019-4
- PN-EN 61000-3-3:2013-10+A1:2019-10

The full declaration of conformity is enclosed with the packaging and is held by the manufacturer and distributors of the device.

Warranty and Service

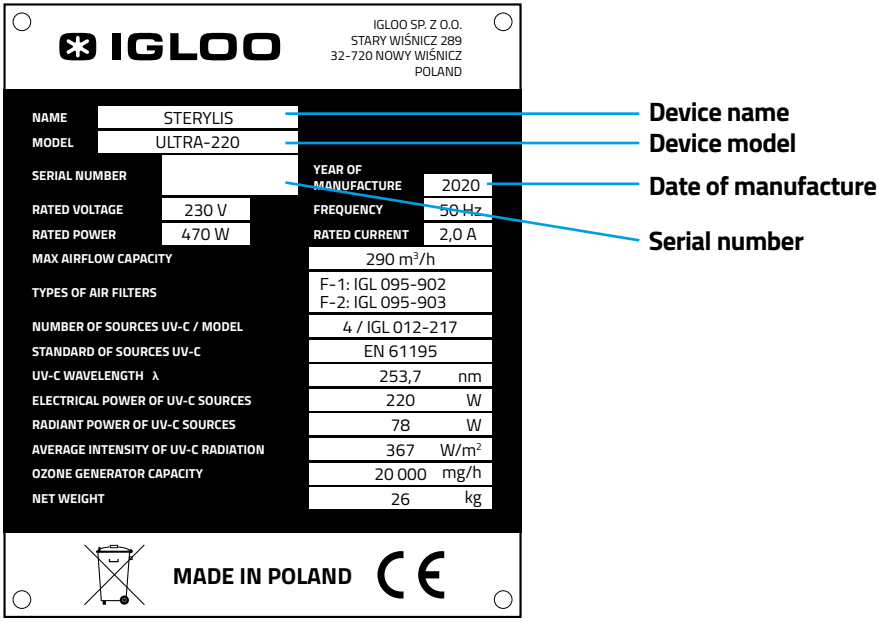
The warranty period is 1 year. It is possible to extend the warranty period for a fee. Please contact the manufacturer for more detailed warranty information.

Manufacturer's data
IGLOO Sp. z o.o.
Stary Wiśnicz 289,
32-720 Nowy Wiśnicz
Phone +48 14 662 19 10
E-mail address: info@igloo.pl

Contact with the service department
Phone: +48 801 080 257
E-mail address: serwis@igloo.pl

When contacting the service department, you may be required to provide the data on the unit's nameplate:

- Serial number
- Date of manufacture
- Device name and model



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